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July 28, 2005

Fernald Closure Project
Letter No. C:PROJ:2005-0051

Mr. Johnny W. Reising, Associate Director
U. S. Department of Energy
Ohio Field Office - Fernald Closure Project
175 Tri-County Parkway
Cincinnati, Ohio 45246

Dear Mr. Reising:

CONTRACT DE-AC24-01OH20115, TRANSMITTAL OF THE 2004 CONSOLIDATED MONITORING REPORT FOR RESTORED AREAS AT THE FERNALD CLOSURE PROJECT

Enclosed is the 2004 Consolidated Monitoring Report for restored areas at the Fernald Closure Project (FCP). This document provides the results of implementation and functional monitoring activities completed in restored areas of the FCP in 2004. Upon your concurrence, please forward to the U.S. Environmental Protection Agency, the Ohio Environmental Protection Agency, and the Natural Resource Trustees.

If you have any questions or require additional information, please contact Eric Woods at (513) 478-1547.

Sincerely,

J. D. Chiou, Project Manager
Environmental Closure Project

JDC:EW:JH:ldt
Enclosure

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File Record Subject – 2004 Consolidated Monitoring Report for Restored Areas at FCP
Letter Log Copy, MS1
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ENCLOSURE

2004 CONSOLIDATED MONITORING REPORT
NARRATIVE SUMMARY
JULY 2005

The attached tables and figures present the data collected in 2004 for Implementation and Functional monitoring of restored areas at the Fernald Closure Project (FCP). Implementation monitoring included vegetation survival within the Northern Pines Restoration Project and a wetland delineation of the Area 1, Phase I (A1PI) Wetland Mitigation Project. The wetland delineation completes monitoring requirements for the A1PI Wetland. Functional monitoring involved comparisons of restored upland prairie communities in A1PI, Area 8, Phase I (A8PI), and Area 8, Phase II (A8PII) to baseline conditions and reference sites. In addition, precipitation data for 2004 is presented in Table 1. While the cumulative amount of rainfall was slightly below average in 2005, no prolonged periods of drought were experienced, and site meteorological conditions were generally favorable for restoration activities.

Implementation Monitoring

Vegetation survival for the Northern Pines Restoration Project is presented in Table 2. All planted trees and shrubs were surveyed in Patch PA2S1 and PA2S3. In other patches, random 100 m^2 quadrats were used to sample survival. The results of this effort show that vegetation survival in the North Pines is influenced primarily by deer browsing. Deer exclosure fencing was installed around Patch PA2S1. This was the first use of exclosure fencing as part of ecological restoration at the FCP. Not surprisingly, this patch had no deer damage and the highest rate of survival within the North Pines. For most other patches, deer damage was evident on over half of the plants observed. Plastic "deer tubes" that were installed around individual trees are effective at keeping deer from browsing or rubbing small plants or trees that are tall enough that their limbs are above the reach of deer. However, for most plants, deer tubes cause several problems. First, deer are able to browse the tops of trees that are exposed above the four-foot height of the tubes. Second, deer tubes may exacerbate rodent damage. Mice and other small mammals build nests in the tubes and gnaw at the planted tree. The rodent damage reported on Table 2 is attributed to nests within deer tubes. Based on these findings and observations from other restoration projects, plastic deer tubes will no longer be used at the FCP. Exclosure fencing is now the primary means of deer protection. When exclosure fencing is not feasible, individual plants will be protected with welded wire fencing. These measures should greatly increase vegetation survival within ecological restoration projects at the FCP.

Herbaceous cover across the North Pines project area exceeds 90 percent in all areas. The extent of native grass and forb establishment will be characterized in 2005 and discussed in the 2005 Consolidated Monitoring Report.

The A1PI Wetland Mitigation Project has been monitored for the past five years. All Implementation and Functional monitoring results have indicated that the project is meeting its goals of creating wetlands. In 2004, a wetland delineation was conducted in order to determine the extent of jurisdictional wetlands created. Using the criteria established in the 1887 U.S. Army Corp of Engineers Wetland Delineation Manual, 5.34 acres of wetlands have been created in the project area. Figure 1 shows the wetland boundaries in each basin.

Implementation monitoring of the A1P1 Wetland Mitigation Project is now complete. DOE will continue Functional monitoring and maintenance of the project area as specified in the Legacy Management and Institutional Controls Plan.

Functional Monitoring

The Functional monitoring data summary is presented in Table 3. Area-specific species lists are found in Tables 3a through 3c. The survey parameters demonstrate that restored upland prairies are providing ecological benefit at the FCP. All parameters from all sites are better than baseline conditions. Native species composition is at or near the 50 percent criterion established by the Fernald Natural Resource Trustees.

The 2004 prairie data show that while there is improvement over baseline conditions, restored prairies at the FCP have not reached the same quality as the upland prairie reference site. A review of the area-specific species lists indicate that a variety of non-native weeds and cool season grasses are competing with seeded prairie species for resources. Also, native and non-native woody vegetation is becoming established in some areas. Enhanced management in the form of burning, mowing, and/or the use of more selective herbicides should increase the establishment of native prairie species. FCP prairie areas have been maintained through mowing and herbicide use. These efforts will be continue in 2005. DOE is committed to maintaining restored prairies pursuant to the Legacy Management and Institutional Controls Plan.

Activities in 2005

Implementation monitoring activities in 2005 will include vegetation survival estimates in Paddys Run East and West and the Phase 2 Wetland Mitigation Project. Herbaceous cover estimates will also be conducted in the Phase 2 Wetland Mitigation Project, as well as the North Pines. In addition, water levels will be measured in the Phase 2 Wetlands. Functional monitoring will involve the characterization of restored forest communities within A8PII, the North Woodlot, and the Southern Waste Units.